

*Food.* The food of both larvae and adults consists of feathers (the barbs), barley, oatmeal, sunflower seeds, seeds found in bird excrement, rice, dead crickets and dead larvae of their own species.

*Exceptionally long duration of larval stage.*—The species is generally annual in its development, but not without exception. The eggs are deposited in early summer; in August the larvae are full-grown, but go on feeding until about March, when they usually pupate, but some go on longer. In the material of *T. obscurus* taken full grown in October, 1913, I have three still feeding in the grown larval state now, November 16, 1914, and they seem to be healthy, and in good condition, while their sisters have done their share in propagating the race and died long ago.

*Color.* The color of the larva of *T. obscurus* is dark brown, while the entire pupa is cream white and remains so until about to transform into an adult; then first of all the legs and antennae assume a reddish brown color, then the head and finally the entire body. The adults at transformation are also of this brownish color, but gradually become darker until after a few days they are of a dull, piceous black color.

---

## Three new Species of Japanese Orl Flies (Neur., Megal.).

By WARO NAKAHARA, Tokyo, Japan.

Amongst recent additions to my collection from different parts of Japan are the following three species of *Sialis* which are evidently undescribed. Although as ordinary-looking as the others, they possess anal appendages very different from those of any other known species.

*Sialis diminuta* n. sp. (Text-fig. 1).

Head black with about ten obscure brownish longitudinal streaks, of which the median two are very distinct, on caudal half; maxillary palpus ochraceous brown, excepting the basal joint which is black; labial palpus totally blackish; antennae black.

Prothorax evidently wider than the head, rounded on the anterior

angles and somewhat concave on the middle of the posterior margin; the rest of thorax totally blackish.

Legs all black, with fine hairs on coxae and femora; the first tarsal joint nearly as long as the second and third together in each leg; claws blackish.

Fore wing rather smoky, suffused with ferruginous in the basal portion and at pterostigma; veins stout and black, basal portion of the upper branch of media and the inner cross-vein between radial sector and media nearly colorless; about ten cross-veins in costal area; three or four veins in pterostigmatic region; one cross-vein between subcosta and radius. Hind wing much paler than the fore wing, especially so in anal area; pterostigmatic region darkish, containing two or three veinlets; some five or six cross-veins in costal area.

Abdomen dark piceous; the ninth segment moderately long; the tenth segment very short. Ventral appendages of the male long, narrow, and rounded at apex, wide apart from each other.

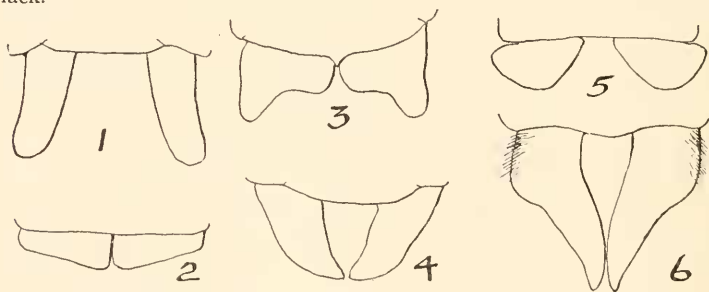
Length of body 8 mm., of fore wing 9 mm., of hind wing 7.5 mm.

A single male specimen, captured by me at Seta, near Tokyo, in April, 1914, is in my collection.

*Sialis melania* n. sp. (Text-fig. 2).

Head black with many impressed longitudinal lines on the caudal half; maxillary palpus black; labial palpus fuscous black; antenna black, shorter than fore wing.

Prothorax wider than broad, rather rounded on anterior angles, and somewhat concave on posterior margin; meso- and metathorax entirely black.



Ventral abdominal appendages of males of Japanese species of *Sialis*.

1.—*Sialis diminuta* n. sp. 2.—*S. melania* n. sp. 3.—*S. nikkoensis* n. sp.  
4.—*S. japonica* v. d. Weele. 5.—*S. mitsuhashii* Okamoto. 6.—*S. frequens* Matsumura.

Legs deep black, the first tarsal joint shorter than the next two following joints together in fore and middle legs, but in hind leg these two parts are of nearly the same length.

Fore wing nearly black, somewhat paler in the discal area; basal

portion deeply blackish along subcosta, radius, media, lower cubitus and upper anal vein; membrane with a great many minute black spots. Venation black, excepting median fuscous portion of media; costal area blackish at basal half, gradually becoming paler toward middle, with about ten cross-veins; pterostigmatic region blackish, with one, two, or rarely three, fuscous veinlets. Hind wing paler, nearly colorless in anal area, but blackish in apical and hind marginal areas; pterostigmatic region tinged with fuscous. Venation mostly blackish, but radius, media and cubitus are yellowish at bases, and anal veins almost entirely yellowish; a blackish streak along the upper cubitus and first anal vein.

Abdomen black, somewhat brownish on ventral side. In the male, the ninth abdominal segment rather long, the tenth much shorter; ventral appendages are nearly equilaterally triangular in outline, and are very close together.

Length of body, 11 mm.; of fore wing, 11 mm.; of hind wing, 10 mm.

Two specimens (♂ ♀), captured by Mr. T. Esaki, at Minomo, near Osaka, in May, 1914, are in my collection.

***Sialis nikkoensis* n. sp. (Text-fig. 3).**

Head blackish, a little narrower than prothorax, not narrowed posteriorly, beset with blackish hairs on the sides; caudal half of head with ferruginous streaks and spots; maxillary and labial palpi fuscous; antenna black.

Prothorax black, rather rounded on the anterior angles; meso- and metathorax nearly as large as prothorax, and totally blackish.

Legs black, coxae and femora of all the legs covered with short brownish hairs; the first tarsal joint as long as the next two following joints together in each leg; claws very small, piceous.

Fore wing slightly tinged with grayish; marginal area somewhat brownish; basal portion deeply variegated with piceous black, especially deeply along veins; pterostigma rather piceous. Venation black, basal portion of upper branch of media pale; 11-14 cross-veins in discal area; two very weak cross-veins in pterostigma; a single cross-vein between subcosta and radius. Hind wing slightly tinged with grayish throughout; pterostigma and apical area of the wing more or less suffused with brownish; venation mostly blackish or piceous; narrowly piceous along upper cubitus; 6-8 cross-veins in costal area.

Abdomen fuscous gray; the ninth ventral segment very short; the tenth segment short, yellowish and minutely spotted with piceous. Paired ventral appendages very large, nearly deltoid in shape when seen from below.

Length of body, ♂ 15, ♀ 17 mm.; of fore wing, ♂ 12, ♀ 14 mm.; of hind wing, ♂ 11, ♀ 13 mm.

Three male and seven female specimens, captured by me at Yumoto, Nikko, on July 29, 1914, are in my collection.

In studying these new species I had occasion to examine rather minutely the anal parts of all the Japanese forms of which I possessed adequate material, including all the described species excepting *S. jezoensis* Okamoto, of which only a single *female* specimen (type) is known. I have given here outlines of the ventral aspects of the appendages of the new species just described, together with those of other known species, as these are of considerable value in determination of the species.

---

## Life History of *Menesta albaciliella* Chambers (Lep.).

By ANNETTE F. BRAUN, Cincinnati, Ohio.

*Strobisia albaciliacella* Cham., Can. Ent., X, 77, 1878;

*Menesta albaciliacella* Busck, Proc. U. S. N. M., XXV, 903, 1903;

Dyar, List N. A. Lep., No. 5652, 1902.

The fact that the imagos of this species are always found in open woods or fields amongst patches of blackberries, and usually resting on the upper side of the leaves in the sun, pointed to the probability of blackberry for the food plant. A search for the larvae several weeks later resulted successfully and a number of moths were reared.

The larval habits of this species resemble in general those of the other two species of the genus, but show some interesting and peculiar variations from the habits of either.

On June 19, a number of larvae, some very young, others about half grown were secured on leaves of the common blackberry (*Rubus villosus* Ait.). The larva feeds on the under surface of the leaf, beneath a web of silk which begins in the angle between the midrib and a lateral vein and extends along the midrib and outwardly between two lateral veins. The accompanying figures will supplement the description to follow. At first the larva skeletonizes a narrow portion of leaf extending from the angle along a lateral vein, or rarely from the angle along the midrib itself (*a*). In the basal part